UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
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REF: 8EPR-ER

PROGRESS POLLUTION REPORT
LIBBY ASBESTOS
Libby, Lincoln County, Montana

I. HEADING

Date:	**October 17, 2001**
Site Name:	Libby Asbestos Site
From:	Paul Peronard, OSC
	Duc Nguyen, OSC
	Johanna Miller, OSC
To:	Patty Smith, EPA Headquarters
POLREP No.:	**#4**

II. BACKGROUND

Site No.:	BC
Response Authority:	CERCLA
CERCLIS No:	MT0009083840
NPL Status:	NA
Action Memorandum Status:	Approved 5/23/00
Start Date :	6/01/00
Demobilization Date:	TBD
Completion Date:	TBD

III. SITE INFORMATION

A. Incident Category

Time Critical, Fund-Lead and PRP-Lead

B. Site Description (Please see the initial POLREP)

1. Site Location

The Site is located in Montana within Sections 3 and 10, T.30N.,R.31W. of the Libby Quadrangle in the County of Lincoln.

2. Description of Threat (Please see the initial POLREP)

An Action Memorandum Amendment was approved on August 17, 2001 to address six additionally identified locations for response actions. The six additional locations are: the Brownlee property, the Seifkie property, Plummer Elementary School, Libby High School, Libby Middle School, and Rainy Creek Road. Similarly, subsequent residential sampling has identified additional high levels of amphibole asbestos in approximately 20 homes (the Calhoun, the Westfall, the Burriss, etc.) and other affected areas (i.e the Champion Hall Road).

C. Preliminary Assessment/Site Inspection Results

- **Railroad Tracks (Burlington Northern & Santa Fe Railway Company):** *Unexpanded vermiculite has been found by BNSF along its tracks and rail yards. Baseline monitoring along the tracks conducted by BNSF has found the highest concentrations measured during the sweeping ranges from 7 to 14 f/cc in air samples in three locations - Hwy. 37 crossing the railroad tracks, close to the 5th street track crossing, and the loading station near the Bluffs.*

- ***Residential Areas:*** *To date, more than 450 homes have sampling in and around Libby. Beside vermiculite insulation found in the attics and walls ranges from a trace to 1% of friable amphibole asbestos, approximately 20 residences have been found either with unexpanded vermiculite in piles, gardening areas, or mixed in the sodded areas outside their homes (2-10% asbestos by PLM). In addition, a large amount of concentrated unexpanded vermiculite rocks sizing from 12 inches to several feet wide have been discovered at a couple of residences. These rocks (>35% asbestos by weight) were brought from the mine and are being used as decorative rocks in the rock garden areas.*

- ***Libby High School:*** *During the course of the removal, more contamination of amphibole asbestos has been found at the tennis courts, under the bleachers, around the buried water main lines (>5% asbestos by PLM) and inside the "visitor/home locker" buildings (11 f/cc in dust samples by TEM - ISO 10312) adjacent to the asbestos-contaminated running track. These buildings have been used as a storage of the track/football practice equipment, a concession room, and the press box.*

- ***Libby Middle School:*** *More visible vermiculite also was found in the eastern and western parts of the football field during the excavation*

IV. RESPONSE INFORMATION

A. Situation

1. Current situation/removal actions to date: EPA is continuing its on-site investigations in Libby.

Export Plant (PRP-Lead): *On July 27, 2001, EPA has ordered W.R. Grace to demolish all buildings, excavate the contaminated soil, and properly restore the property. Demolition of the buildings was begun on August 27, 2001. In addition to the contamination found in the western part of the Export Plant, a new contamination area (approximately 50 ft. wide by 200 ft. long and 5 ft. depth) has been discovered and excavation was begun on October 1, 2001. This northern area is where the two former youth baseball fields used to be situated. All buildings excluding the Planer Building have been demolished and contaminated soil underneath the buildings also has been removed. To date, a total of 4,600 cubic yards of debris and soil has been removed and disposed at the mine. W.R. Grace is still negotiating with the tenants and the City of Libby (owner) for relocation and restoration. The cleanup is anticipated to be completed in spring of 2001.*

The Screening Plant (EPA-Lead): *Two remaining asbestos-contaminated areas that need to be removed are a 1,200 foot bank of Kootenai River and both sides of the 720-foot Rainy Creek where the elevated amphibole asbestos concentrations (>2% by PLM) have been found in various elevations. Excavation at the contaminated banks was begun on September 15, 2001, beginning at the Kootenai River's 1,200-foot bank first and then following with the Rainy Creek's two 600-foot banks. Contaminated soil is being removed with 6-inch increments, to a maximum depth of 18 inches from the top of the bank to the river water surface, simultaneously stabilized by placing rip rap materials at the lower half portion; and backfilled with the common fill, compacted, hydro-seeded for the upper half portion. The bank stabilization should be completed by November 5, 2001. As a result of the test pit conducted for the south end portion of the Rainy Creek, approximately 4 feet of contaminated soil will be removed. . To date, a total of 170,000 cubic yards of soil and 31,000 cubic yards of debris from all the individual sites has been hauled to the mine.*

The Bluffs (EPA-Lead): *This 64-acres site is located across the Kootenai river from the former Screening Plant, known as part of the KDC properties. In the past, the screened ore was conveyed across the river to the Bluffs' rail loading operation adjacent to a Burlington Northern Rail Line. Asbestos-contaminated vermiculite (>1% by PLM) was generally stockpiled on the far north-east portion (Stockpile #1), the middle portion (Stockpile #2) of the property, the access roads, and the Bluff slope. Excavation has begun since September 17, 2001. To date, a total of 13, 761 cubic yards has been excavated and hauled to the Flyway as a temporary staging area. More vermiculite has been discovered along the 3,300-feet utility trench and several feet deep. The removal action for this site is scheduled to be completed by the end of October, 2001.*

The Flyway (EPA-Lead): *This approximately 20-acres site is located immediately south of the former Screening Plant, also known as part of the KDC properties. The site is currently vacant and adjacent to the "River Run Through It" residential area. To date, excavation of amphibole-contaminated soil (>1% by PLM) has been completed approximately 1000 feet from the residential property boundary and 20,000 cubic yards of soil have been removed. The flyways have been used as temporary staging area for soil excavated from other sites. The removal is expected to be completed in spring 2001.*

The Rainy Creek Road (EPA-Lead): *(Please see previous POLREP)*

Schools (EPA-Lead):

- **Plummer Elementary School**: *Excavation at the ice skating rink has been completed and backfilled with pea gravel. A total of 1,023 cubic yards of asbestos-contaminated soil have been removed and hauled to the mine for repository. Removal Action was completed on July 27, 2001.*

- **Libby High School:** *More asbestos-contaminated vermiculite was found underneath the walkway at the northern edge of the football field. Contaminated soil removal (approximately 6,500 cubic yards) has been completed on August 9, 2001. All buildings and unsalvageable athletic equipment also has been decontaminated. The football field and its buildings were returned to the school on September 14, 2001. Due to the weather, the rubberized track will not be installed until next year.*

- **Libby Middle School:** *Like the high school, more asbestos contamination has been found at 3-5 feet depth at the school's running track during the repairing of water lines at the eastern portion of the site . All asbestos-soil contamination has been removed (6,633 cubic yards of contaminated soil). The site is scheduled to be completely restored by October 15, 2001.*

Other Residential Removal Actions (EPA-Lead):

- **Seifkie Resident:** *The Seifkie property is located at 3496 Hwy 2 South, in Libby, Montana. The property has no vermiculite insulation and consists of several structures (a house, a storage shed, a warehouse, a wood shed, and a barn), a garden area, a greenhouse, a corral, and numerous used/contaminated vehicles, tractors, and mining equipment which were purchased from the mine. In general, the asbestos-contaminated building, footprints demolition, and unsalvageable mining equipment disposal that*

can not be decontaminated have essentially been completed. Contaminated soil in the garden and in the Barn/Corral areas also has been excavated. To date, a total of 3,600 cubic yards of contaminated soil and debris has been hauled to the Flyways' temporary staging area.

- **Brown-Lee Resident:** *The property is located at 819 Cabinet View Heights, in Libby, Montana. The contamination was found in the garden area, the vermiculite pile (2% by PLM), and a landscaped yard where the vermiculite was imported as a soil conditioner. The family was relocated during the cleanup. A total of 100 cubic yards of contaminated soil was removed using vacuum truck. Removal action was completed on September 20, 2001.*

- ***Millie Johnson Resident**: All contaminated soil containing Tremolite rock (>35% of amphibole asbestos) has been removed using vacuum truck. The cleanup was finished at this property on October 13, 2001.*

- ***Calhoun Resident**: All decorative vermiculite rocks in the rock garden areas and contaminated soil has been removed. The cleanup was completely finished on October 17, 2001.*

- ***Burris Resident**: All decorative vermiculite rocks in the rock garden areas has been removed. The cleanup is anticipated to be completed by October 31, 2001.*

Medical Testing Program:

- *ATSDR completed the second round of medical testing on September 7, 2001 as part of the Libby Community Health Project. 1,212 people have been tested. ATSDR is not planning a third round of medical testing. Future testing will be conducted by state and/or local health agencies.*

- *ATSDR presented a report to the Libby community on August 23, 2001, entitled "Medical Testing of Individuals Potentially Exposed to Asbestoform Minerals Associated with Vermiculite in Libby, Montana": ATSDR reported that additional findings from the face-to-face interviews, three-view chest x-rays, and spirometry tests which were given to 6,159 people from July 5, 2000 through November 2, 2000, showed that:*

    - *48% of former W.R. Grace former employees have pleural abnormalities.*

    - *Most participants reported multiple routes of exposure (e.g.- household contact, occupational, recreational, et.al.) For example, 24% of participants who reported 6 or more routes of exposure had pleural abnormalities.*

O 5% of those participants who reported no apparent exposure had pleural abnormalities.

Factors most strongly related to having pleural abnormalities were 1) having been a Grace/Zonolite worker, 2) having household contact with a Grace/Zonolite worker, and 3) being a male. The rate of pleural abnormalities in the U.S. ranges from 0.2% to 2.3%.

On-Going Projects:

a. Phase II - Residential Sampling (Libby Task-Based Exposure Monitoring): *A Phase II sampling was begun on March 5, 2001, to investigate specific exposure scenarios to airborne asbestos fibers during common routine household cleaning and renovation/repairs activities. The final report of this study is expected to be completed sometime in October, 2001.*

- *Scenario I: Routine household activities (excluding active cleaning) - 16 households have participated.*
- *Scenario II: Active house cleaning activities (dusting, sweeping, etc. - 23 homes have participated.*
- *Scenario III: Simulated remodeling activities that involve direct contact or handling of vermiculite insulation - 3 homes were completed.*
- *Scenario IV: Roto-tilling a home garden containing vermiculite in the soil - 1 home was completed.*

b. ***Performance Evaluation Study (PE):*** *The purpose of this PE study is to provide a means of assessing the strengths and weaknesses of the various analytical methods for asbestos in solid media (soil, dust, vermiculite, etc.) The outcome of this study is expected to be a generally accepted standard for testing asbestos in soil. This study is expected to be completed early in calendar year 2000. The PE Plan is divided in 3 parts:*

- *Part A: Collection of soil and asbestos materials;*
- *Part B: Preparation of PE Samples;*
- *Part C: Round-robin analysis of PE samples.*

The USGS is currently characterizing a representative suite of 30 amphibole samples collected from the various locations at the Zonolite Mine (Libby) for round-robin analysis. To date, a batch of six PE samples has been prepared, using ball-mill grinding and micronizer, and is ready to be submitted to different labs for various analytical methods.

c. ***Risk Assessment Update:*** *The existing EPA risk methodology apparently underestimates cancer risks from exposure to amphibole asbestos. This is*

due to outdated analytical protocols and incomplete dose-response evaluation for fiber size and chemistry. In addition, EPA risk assessment protocols do not allow for the consideration of asbestosis, a non-cancer disease associated with inhalation of asbestos fiber. Region 8 is working with Dr. Bermann and other agencies to update Agency cancer risk assessment methods. The draft undated risk assessment is expected for peer review in calendar year 2000.

2. Enforcement

O ***W.R. Grace:*** *EPA is continuing to pursue enforcement actions - preparing for discovery in the access and cost recovery cases and remaining open to a global settlement of W.R. Grace's liability. However, because Libby vermiculite went to so many facilities around the country, such a settlement will be difficult to formulate.*

O ***"No Action" Assurance:*** *EPA-Region 8 has determined that it will not seek to recover from local business owners and residents in Libby, Montana, the costs associated with the cleanup of amphibole asbestos contamination on those individuals' property which meets the following criteria:*

- *The owner has provided, and will continue to provide, access to EPA for its response actions;*
- *The owner has **not** actively participated for a for-profit enterprise of distributing, treating, storing or disposing of Libby vermiculite;*
- *The owner will take appropriate precautions in handling any visible vermiculite in and around his or her business/home, avoiding possible activities which may spread the vermiculite to other locations.*

For the individual business owner, he or she must certify that prior to November of 1999 he or she had no knowledge of vermiculite on his/her property which contained asbestos.

B. <u>Planned Removal Actions</u>

EPA has proposed more funding to initiate removal actions which will mitigate the threat to the public health and welfare or the environment posed by the asbestos present on the KDC Properties, the Rainy Creek Road, the school tracks, the ice skating rink, and two residential properties which have no Zonolite insulation in the attic and/or walls. In general, removal activities will consist of excavation, demolition, off-site disposal (mine), and restoration.

In order of priority, the projected completion for on-going removal action sites are outlined below:

Action Items	Planned Start Date	Planned Completion
1. Screening Plant		
- Demolition of Tunnels & Footings	August 15, 2001	September 11, 2001
- Backfill & Compact Imported Materials (South/North Sides and Long Shed Areas)	September 1, 2001	October 27, 2001
- Rainy Creek Excavation & Restoration	October 30, 2001	November 15, 2001
- River Banks Excavation & Restoration	September 15, 2001	November 15, 2001
- Demobilization for Winter		November 15, 2001
- Final Grading	September 1, 2001	July 30, 2002
2. Export Plant		
- Demolition of Buildings & Footings		
- Excavation of soil		
- Final Restoration		
3. KDC Properties:		
The Flyways		
- Excavation of contaminated soil		
- Final Restoration		
The Bluff		
- Excavation of contaminated soil		
- Final Restoration		
4. Schools		
- Elementary School		
- High School Track		
- Middle School Track		
5. Residential Areas		
- The Brownlee	June 15, 2001	July 15, 2001
- The Seifkie	May 28, 2001	October 30, 2001
- The Johnson		
- The Calhoun		
- The Burriss		
-		
6. The Rainy Creek	May 1, 2001	December 15, 2002

C. Next Steps

Burlington Northern and Santa Fe Railroad has agreed to complete the cleanup under a consent order to address high levels of asbestos airborne on the railroad tracks and loading/unloading areas used to transport vermiculite products in between the Export Plant and the Screening Plant. A site-specific sampling plan is being developed by BNSF and sampling activities should be conducted in November, 2001.

Continue working with the Montana Governor, Montana DEQ, ATSDR, PHS, USGS, and Libby community to initiate the process for listing the Libby Asbestos Site on the National Superfund Priorities List (NPL). Currently, a Hazard Ranking System (HRS) scoring package is being put together and input is being sought from the public - including businesses, as well as State and local elected officials - as how to best proceed with the Site in the long term. The listing could occur either at one site, including all of the Libby, or as two sites, with the mine and City listed separately.

Continue Phase I - Residential Sampling and compile analytical results from the on-going Phase II - Residential Sampling and Environmental investigations to determine the need for asbestos-contaminated mitigation actions for residential areas. This information also will be used to assess the risks associated with vermiculite insulation in homes for public health emergency declaration. EPA can only remove Zonolite insulation in homes if a public health emergency is declared.

D. Key Issues

Gov. Judy Martz has rejected a request from Lincoln County Commissioners to use Montana's one "silver bullet" option to place Libby and surrounding vermiculite mine sites on the NPL for guaranteed long-term cleanup. The "silver bullet" option would allow state and federal authorities to bypass public comment and red tape which may delay a Superfund designation by about six months or longer. This Governor's decision could delay the cleanup at the proposed sites and residential areas where the Libby community potentially had been exposed to unsafe amount of amphibole asbestos and continue to burden an already heavily impacted community.

V. COST INFORMATION

EXTRAMURAL COSTS	Planned Cost (Action Memo - 5/23/00)	Cost to Date (01/31/01)	Proposed Ceiling (FY01)

1. Export Plant (PRP - Lead)			
- DOT-Volpe Oversight and Engineering	$100,000	$216,000	$200,000
- Site Mobilization	$110,000		
- Site Excavation	$330,000		
- Demolition the Long Shed and Tunnels	-0-		
- Restoration	$300,000		
- Settlement (Parker)	-0-		
- Transportation and Disposal of Waste/Debris (Zonolite Mine)	$220,000		
- Analytical Support	$275,000	$236,000	
Subtotal	**$1,325,000**	**$452,000**	**$200,000**
2. Screening Plant (Fund - Lead)			
- DOT-Volpe Oversight and Engineering	$250,000	$252,000	$250,000
- Site Mobilization	$180,000	$180,000	$100,000
- Site Excavation - River Banks	$525,000	$2,779,000	$400,000
- Demolition the Long Shed and Tunnels	$525,000	-0-	$200,000
- Restoration	$1,100,000	$1,196,000	$683,000
- Settlement (Parker)	-0-	-0-	$1,500,000
- Transportation and Disposal of Waste/Debris (Zonolite Mine)	$250,000	-0-	$650,000
- Analytical Support	$275,000	$1,488,000	$300,000
- Outstanding Costs from FY00			$1,917,000
Subtotal	**$3,105,000**	**$5,895,000**	**$6,000,000**
3. KDC Properties (Screening Plant)			
- DOT-Volpe Oversight and Engineering	-0-	-0-	$400,000
- Site Mobilization	-0-	-0-	$50,000
- Excavation & Restoration	-0-	-0-	$1,300,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	$350,000
Subtotal	**-0-**	**-0-**	**$1,500,000**
4. School Tracks and other Affected Areas			
- Preparation of Site Property	-0-	-0-	$200,000
- Excavation of Contaminated Soil and Structures and Restoration	-0-	-0-	$2,500,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	$300,000
Subtotal	**-0-**	**-0-**	**$2,500,000**

5. Residential Areas			
- Residences (Brownlee)	-0-	-0-	$100,000
- Residence (Seifkie)	-0-	-0-	$400,000
- Other Residences	-0-	-0-	$100,000
Subtotal	**-0-**	**-0-**	**$600,000**
6. Rainy Road			
- Interim Action (Temporary Paving)	-0-	-0-	$250,000
- Excavation	-0-	-0-	$300,000
- Transportation and Disposal of Waste (Zonolite Mine)	-0-	-0-	$200,000
- Restoration	-0-	-0-	$750,000
Subtotal	**-0-**	**-0-**	**$1,500,000**
Subtotal Extramural	$4,630,000	$6,347,000	**$12,300,000**
Contingency (20%)	$886,000	$1,269,000	**$2,460,000**
Total Extramural Costs	**$5,516,000**	**$7,616,000**	**$14,760,000**
INTRAMURAL COSTS			
1. EPA Direct Costs	$150,000	$250,000	$250,000
2. EPA Indirect Costs	$150,000	$250,000	$250,000
Total Intramural Costs	**$300,000**	**$500,000**	**$400,000**
PROJECT CEILING	**$5,816,000**	**$8,116,400**	**$15,260,000**

VI. DISPOSITION OF WASTES

Since May 18, 2001, the 170,000 cubic yards of asbestos-contaminated soil and 31,000 cubic yards of debris stockpiling at the Screening Plant has been hauled to the Zonolite mine.